

Past, Present, and Future Perfect

• Our papers this month deal with fishery problems past, present, and future. They range in time from the late 19th century on through the present to the 21st century. In "Fisheries Research Steamer *Fish Hawk*," John Reintjes recounts the history of a sturdy old vessel that began her career as a floating fish hatchery, designed to augment shad runs along the eastern coast of the United States. She began her mission just under a century ago. When the idea of a floating hatchery lost appeal early in this century, she was used for other forms of fishery research until she was condemned and sold in 1926. "For nearly half a century," Reintjes says, "she symbolized Federal fisheries research to fishermen and other coastal residents along the Atlantic seaboard."

In "Why the cod shortage? What are the alternatives?" Donald Whitaker addresses himself to a serious contemporary problem—dwindling supplies of cod—and suggests some solutions. In "The overland shipment of live Dungeness crab by self-contained van" H. J. Barnett and his co-authors describe research aimed at getting premium quality seafood to outlying markets. In "San Francisco Bay area's herring resource—a colorful past and a controversial future," Maxwell Eldridge and Michael Kaill tell about the efforts of the State of California, spurred by the fierce local demand of the people of San Francisco—the only people in this country with the temerity to *tear down* a freeway—to preserve and enhance a small, local fishery.

With "The technological basis for development of aquaculture to produce low-cost food fish" John Dassow and Maynard Steinberg tackle the future head-on. Their long, thoughtful, and detailed article faces up squarely

to what the futurists say is a problem that we cannot dodge—supplying nutritious, inexpensive food (not specialized gourmet items) for the nourishment of our people.

There is a tense in English called "future perfect." (This is far different from a perfect future—nobody over 14 years of age believes in that.) An example of the usage of this tense would be: "By the year 2000, the world fish catch will have reached its maximum potential yield." Dassow and Steinberg cannily refuse to set a date by which their highly technological system of fish production is likely to be in use, but, informed optimists, they say it can be done. The mechanized, mass-production system they envision is a good long way from the stocking our eastern rivers with shad from the *Fish Hawk*. It probably has a better chance of success, too, for one by one, the variables that have harrassed fish production in the past seem to be disappearing, as man begins to exercise greater control.

• Speaking of the future, it is with us. Reprinted below, verbatim and without further comment, is a recent release from the NMFS Statistics and Market News:

The Tokyo Aircraft Instruments Company has developed a \$5,660 automatic fishing machine called Ultra Power Fisher that can automatically land a bonito-sized fish, unhook it, bait the hook and start fishing again in about 10 seconds. It can haul in fish weighing from 6½ to 66 pounds with equal facility. The four-unit device consists of a nine or 15-foot pole, an air compressor, a fluidic power unit and a control box. Three fishing companies have bought all 300 machines sold since they first went on the market last year and the maker

now has orders to turn out 1,500 more. Installing 12 of these fishers, as most fishing boats using them have done, replaces at least 24 fishermen. When a fish takes the hook, tension sends a signal to the controller on the bridge, who presses a switch raising the pole over a 110-degree arc and then pushes another button releasing the fish onto the deck below. The pole is then brought back the full 180 degrees and the hook automatically picks up sardine bait spread there. The hook is a device that is thrust into the mouth of the fish snapping at the bait, jams open its jaws holding the fish by tension and then returns to normal when the pole is over the deck, breaking the tension and dropping the fish onto the deck below.

• I spent five years in Hawaii. There I learned to like Japanese food very much. With one exception. Every time you ordered sushi (fish, usually raw, on little rice patties), you got one that was topped by a slab of semi-transparent, textureless white squid. To me, eating one was about as rewarding as trying to chew your way through the sole of a tennis shoe. As a result, I have always looked askance at those who insist that squid is one of the great fisheries of the future. (A recent FAO publication, written by Gilbert L. Voss of the School of Marine and Atmospheric Science, University of Miami, estimates the potential of the continental shelf fisheries of the cephalopods, of which the squid is one, at over 7 million metric tons, the oceanic potential at several times that figure.) A recent trip to San Diego, however, has converted me. Squid need not be, as the non-Swedish wife of a Swedish friend of mine once described lutefisk to me, "a gelatinous mess." In San Diego I had "squid cutlets." These were sections of squid deep-fried in a garlicky batter and they were delectable. The plate was garnished with tiny octopuses, also deep-fried. So the future, when we all eat squid and comminuted white amur fish sticks, may not be perfect, but not so bad after all. T.A.M.